

Application No.: 09/822,126
Response Dated: July 5, 2006
Reply to Office Action of: January 9, 2006

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions and the listings of claims in the application:

Claim 1 (previously presented). An intervertebral connection system comprising:

a) a ligament having:

- i) a central portion,
- ii) first and second end portions, and
- iii) first and second conformable portions, each conformable portion comprising a fabric,

wherein the first conformable portion is disposed between the central portion and the first end portion, and the second conformable portion is disposed between the central portion and the second end portion, and

b) first and second shoulderless bone fasteners,

wherein the first end portion is shaped to cooperatively connect to the first bone fastener, and the second end portion is shaped to cooperatively connect to the second bone fastener.

Claim 2 (withdrawn). The system of claim 1 wherein the ligament is bioresorbable.

Claim 3 (withdrawn). The system of claim 1 wherein the bone fastener comprises an attachment end portion, wherein the attachment end portion has a shape for fitting a driver.

Claim 4 (withdrawn). The system of claim 1 wherein each bone fastener further comprises an insertion end portion, wherein the insertion end portion is drivable.

Claim 5 (original). The system of claim 1 wherein at least one of the central and conformable portions is tensionable.

Claim 6 (original). The system of claim 5 wherein the tensionable portion is braided.

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Claim 7 (original). The system of claim 1 wherein the central portion is tensionable.

Claim 8 (original). The system of claim 7 wherein the central portion and conformable portions each have a length, and the length of the central portion is at least twice as long as either conformable portion.

Claim 9 (original). The system of claim 1 wherein at least one of the central and conformable portions is extensible.

Claim 10 (original). The system of claim 9 wherein the extensible portion is braided.

Claim 11 (original). The system of claim 1 wherein the central portion is extensible.

Claim 12 (original). The system of claim 11 wherein the central portion and conformable portions each have a length, and the length of the central portion is at least twice as long as either conformable portion.

Claims 13-18 (cancelled).

Claim 19 (withdrawn). An intervertebral connection system comprising:

- a) a ligament comprising first and second end portions, and
- b) first and second bone fasteners,

wherein the first bone fastener is connected to the first end portion of the ligament, and the second bone fastener is connected to the second end portion of the ligament, and wherein the first bone fastener is configured to accept a driver.

Claim 20 (withdrawn). The system of claim 19 wherein the first bone fastener has an upper surface connected to the first end portion of the ligament, and the upper surface has a recess.

Claim 21 (withdrawn). The system of claim 20 wherein the recess houses a rescue screw.

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Claim 22 (withdrawn). The system of claim 19 wherein the upper surface has a circumference, and the second end of the ligament portion attaches to at least half of the circumference.

Claim 23 (withdrawn). The system of claim 19 wherein the upper surface has a circumference, and the second end of the ligament portion attaches to substantially the full circumference.

Claim 24 (cancelled).

Claim 25 (withdrawn). The system of claim 22 wherein at least one of the lateral protrusions defines an angle α of no more than 45 degrees.

Claim 26 (withdrawn). The system of claim 22 wherein at least one of the lateral protrusions defines an angle α of no more than 30 degrees.

Claim 27 (withdrawn). The system of claim 22 wherein at least one of the lateral protrusions defines an angle α of between 20 degrees and 30 degrees.

Claim 28 (withdrawn). The system of claim 22 wherein the shank has a diameter D, and at least one of the lateral protrusions has a height H, and the height H of the lateral protrusion is no more than 70% of the diameter D of the shank.

Claim 29 (cancelled).

Claim 30 (previously presented). An intervertebral connection system comprising:

- a) a conformable ligament comprising first and second end portions, each end portion comprising a fabric, and
- b) first and second bone fasteners,

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wherein the first bone fastener is connected to the first end portion of the ligament, and the second bone fastener is connected to the second end portion of the ligament, wherein the bone fastener is made of a bioresorbable PLA/PLG copolymer and is shoulderless.

Claims 31-35 (cancelled).

Claim 36 (previously presented). An intervertebral connection system comprising:

- a) a conformable ligament comprising first and second end portions, each end portion comprising a fabric, and
- b) first and second bone fasteners,

wherein the first bone fastener is pre-connected to the first end portion of the ligament, and the second bone fastener is pre-connected to the second end portion of the ligament.

Claim 37 (original). The system of claim 36 wherein the pre-connection is accomplished by physical locking.

Claim 38 (original). The system of claim 36 wherein the pre-connection is accomplished by physical connection.

Claim 39 (original). The system of claim 36 wherein the pre-connection is accomplished by integral connection.

Claim 40 (withdrawn). An intervertebral connection system comprising:

- a) a compressible ligament comprising first and second end portions and having at least one bioresorbable portion, and
- b) first and second bone fasteners,

wherein the first end portion is shaped to cooperatively connect to the first bone fastener, and the second end portion is shaped to cooperatively connect to the second bone fastener.

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Claim 41 (withdrawn). The system of claim 40 wherein the ligament further comprises a bioresorbable central portion.

Claim 42 (withdrawn). The system of claim 40 wherein the ligament further comprises a central portion, and conformable portions disposed between the central portion and each end portion, wherein each conformable portion is bioresorbable.

Claim 43 (withdrawn). The system of claim 40 wherein each end portion is bioresorbable.

Claim 44 (withdrawn). The system of claim 40 wherein each bone fastener is bioresorbable.

Claim 45 (withdrawn). The system of claim 40 wherein the bioresorbable portion is selected from the group consisting of a polymer and a copolymer.

Claim 46 (withdrawn). The system of claim 40 wherein the bioresorbable portion is selected from the group consisting of PLA, PGA and copolymers of PLA and PGA.

Claim 47 (withdrawn). The system of claim 40 wherein the bioresorbable portion is a copolymer comprising PLA and PGA.

Claim 48 (withdrawn). The system of claim 47 wherein the copolymer comprises between 70 wt% and 99 wt% PLA, and 1 wt% and 30 wt% PGA.

Claims 49-57 (canceled).

Claim 58 (withdrawn). An intervertebral connection system comprising:

- a) a compressible ligament comprising first and second end portions, and
 - b) first and second bone fasteners,
- wherein each bone fastener and the ligament are bioresorbable.

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Claim 59 (withdrawn). The system of claim 58 wherein the ligament and each bone fastener has a resorption time, and wherein the resorption time of the ligament is less than that of each bone fastener.

Claim 60 (withdrawn). The system of claim 58 wherein the ligament is tensionable.

Claim 61 (withdrawn). The system of claim 58 wherein the bioresorbable ligament is selected from the group consisting of a polymer and a copolymer.

Claim 62 (withdrawn). The system of claim 58 wherein the bioresorbable ligament is selected from the group consisting of PLA, PGA and copolymers of PLA and PGA.

Claim 63 (withdrawn). An intervertebral connection system comprising:

- a) a ligament having:
 - i) a central portion,
 - ii) first and second end portions, and
 - iii) first and second conformable portions,

wherein the first conformable portion is disposed between the central portion and the first end portion, and the second conformable portion is disposed between the central portion and the second end portion

- b) first and second shoulderless bone fasteners,

wherein the first end portion is connected to the first bone fastener, and the second end portion is connected to the second bone fastener, and

wherein the central portion is made of a first material having a first resorption time, the end portion is made of a second material having a second resorption time, and the first material has a shorter resorption time than that of the second material.

Claim 64 (withdrawn). An intervertebral connection system comprising:

- a) a compressible ligament comprising first and second end portions, and
- b) first and second bone fasteners, each bone fastener having an attachment end comprising a ceramic material and a shank comprising a polymer material.

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Claim 65 (withdrawn). An intervertebral connection system comprising:

- a) a ligament comprising first and second end portions, and
- b) first and second bone fasteners,

wherein the first end portion is pivotally connected to the first bone fastener, and the second end portion is pivotally connected to the second bone fastener.

Claim 66 (canceled).

Claim 67 (previously presented). An intervertebral connection system comprising:

- a) a ligament having:
 - i) a central portion,
 - ii) first and second end portions, each end portion comprising a fabric, and
 - iii) first and second intermediate portions,

wherein the first intermediate portion is disposed between the central portion and the first end portion, and the second intermediate portion is disposed between the central portion and the second end portion, and

- b) first and second shoulderless bone fasteners,

wherein the first end portion is shaped to cooperatively connect to the first bone fastener, and the second end portion is shaped to cooperatively connect to the second bone fastener, and

wherein at least one of the central and intermediate portions is extensible.

Claim 68 (original). The system of claim 67 wherein the extensible portion has a length which can be increased by 25% without exceeding its yield point.

Claim 69 (original). The system of claim 67 wherein the extensible portion comprises a textile.

Claim 70 (original). The system of claim 67 wherein the extensible portion is a braided yarn.

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Claim 71 (original). The system of claim 67 wherein the central portion is extensible.

Claim 72 (previously presented). The system of claim 67 wherein the central portion and end portions each have a length, and the length of the central portion is at least twice as long as either end portion.

Claim 73 (withdrawn). An intervertebral connection system comprising:

- a) a ligament having:
 - i) a central portion,
 - ii) first and second end portions, and
 - iii) first and second intermediate portions,

wherein the first intermediate portion is disposed between the central portion and the first end portion, and the second intermediate portion is disposed between the central portion and the second end portion, and

- b) first and second bone fasteners,

wherein the first end portion has an upper surface, a lower surface and a first transverse hole therethrough, the hole having a shape for receiving the first bone fastener, and the second end portion has an upper surface, a lower surface and a second transverse hole therethrough, the hole having a shape for receiving the second bone fastener, and

wherein the first bone fastener is received within the first transverse hole, and the second bone fastener is received within the second transverse hole,

wherein the intermediate portions are conformable and made of a braided material, and

wherein the upper surface of each end portion is smooth.

Claim 74 (withdrawn). The system of claim 73 wherein the bone fastener is a screw.

Claim 75 (withdrawn). The system of claim 73 wherein the upper surface of the first end portion is integral with the first conformable portion.

Claim 76 (withdrawn). The system of claim 73 wherein the upper surface of the second end portion is integral with the second conformable portion.

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Claim 77 (withdrawn). An intervertebral connection system comprising:

- a) a ligament having:
 - i) a central portion,
 - ii) first and second end portions, and
 - iii) first and second intermediate portions,

wherein the first intermediate portion is conformable and is disposed between the central portion and the first end portion, and the second intermediate portion is disposed between the central portion and the second end portion,

- b) a first shoulderless bone fastener, and
- c) a shouldered bone fastener,

wherein the first end portion is shaped to cooperatively connect to the first shoulderless bone fastener, and the shouldered bone fastener is received through the second end portion.

Claim 78 (withdrawn). A method of stabilizing a pair of vertebrae, each vertebra having a surface, comprising the steps of:

- a) providing an intervertebral connection system comprising:
 - i) a ligament having first and second end portions, and
 - ii) first and second bone fasteners,

wherein the ligament is between the first and second bone fasteners, the first end portion of the ligament being adjacent the first bone fastener, the second end portion of the ligament being adjacent the second bone fastener, and

- b) fully inserting the first bone fastener and at least a portion of the first end portion of the ligament into the first vertebra to a location below the first vertebral surface, and
- c) fully inserting the second bone fastener and at least a portion of the second end portion of the ligament into the second vertebra to a location below the second vertebral surface.

Claim 79 (withdrawn). The method of claim 78 wherein the first and second vertebrae form a portion of a first lateral aspect of a scoliotic spine having a convex curve, the first

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bone fastener is inserted into the first lateral aspect of the first vertebra and the second bone fastener is inserted into the first lateral aspect of the second vertebra, and the insertion step of step c) tensions the ligament, thereby at least partially straightening the convex curve.

Claim 80 (canceled).

Claim 81 (previously presented). The system of claim 30 wherein the conformable ligament further comprises:

- i) a central portion, and
- ii) first and second conformable portions, each conformable portion comprising a fabric,

wherein the first conformable portion is disposed between the central portion and the first end portion, and the second conformable portion is disposed between the central portion and the second end portion.